

U.S.S.N. 10/707,365

- 8 -

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REMARKS

Claims 1-29 are pending in the application. All claims stand rejected.

With regard to the provisional obviousness type double patenting rejection set forth in paragraphs 3 and 4 of the Office Action, Applicants submit herewith a Terminal Disclaimer disclaiming that portion of the term of the present application in view of co-pending application serial number 10/707,368 (Attorney Docket No. 81092489 FGT 1890 PA).

With regard to the specification objection set forth in paragraph 5 of the Office Action, Applicants have amended the title to delete the phrase "with oversteer" to more closely align the title with the claims.

With regard to the rejection of claims 9-11 and 18-29 under 35 U.S.C. §112, second paragraph, for indefiniteness, Applicants have made several clarifying amendments. In particular, the Applicants' use of the term "previous steering wheel angle input" was intended to mean the initial steering wheel angle input before any further modifications performed by the method steps. Thus, claims 9-11 and 18-29 have been clarified to correct this error.

With regard to the rejection of claim 21 under 35 U.S.C. §112, second paragraph, claim 21 has been amended to clarify that the method determines a plurality of steering wheel angle inputs each associated with a different time stamp. This step therefore forms a plurality of periodically determined steering wheel angle values, as explained in paragraph [0028] of the specification. One of these plurality of steering wheel angle inputs is selected which results in a decreasing error signal. One example of this method is explained in paragraphs [0028] through [0030]. Thus, in view of these clarifying amendments, Applicants respectfully request that the rejections under 35 U.S.C. §112 be withdrawn.

With regard to the rejection of claim 24, Applicants have changed its dependency to claim 23 to correct the antecedent basis error noted in the Office Action.

U.S.S.N. 10/707,365

- 9 -

81044284FGT1838PUS

With regard to the rejections under 35 U.S.C. §101 set forth in paragraphs 8 and 9 of the Office Action, Applicants have amended claims 12 and 21 to positively recite a tangible way in which the method steps are operated. Specifically, the method steps are operated on a digital computer system, and the results of the operating steps are output in a useful, tangible and concrete manner. Examples of various outputs for the computer models are described in paragraph [0022] of the specification. Accordingly, Applicants respectfully request that the rejections under 35 U.S.C. §101 be withdrawn.

With regard to the rejections under 35 U.S.C. §102 and §103 which all rely upon Ravani, Applicants traverse. The Ravani disclosure is directed towards an apparatus and method for automatic vehicle lane-keeping. That is, Ravani discloses a system for maintaining a vehicle within its lane such as when operated in a cruise control mode. The system uses a laser sensor to detect three points on the reflective paint stripes on the road to estimate the position of the lane centerline relative to the vehicle. Small steering corrections are then made to maintain the vehicle within its proper position within the lane. Critically, however, the entirety of the Ravani reference is directed toward implementing a system wherein the vehicle is operated well within its dynamic limits. Accordingly, there is no discussion whatsoever of operating the vehicle when it is in an understeer or oversteer condition. Further, the steering angle feedback is all based upon a simple bicycle model which, is noted in the Ravani reference, is invalid for lateral accelerations above approximately 0.3 g (see Column 7, lines 23-29).

In contrast, the entirety of the present disclosure is directed toward a vehicle dynamics behavioral model wherein the vehicle is operated at or near its dynamic limit. In particular, each of independent claims 1, 12 and 21 require that certain steps be performed "when the vehicle model is understeering" which the Ravani reference does not disclose or suggest. In each of independent claims 1, 12 and 21, the understeering condition is determined as a function of the yaw acceleration being greater than a threshold and an increasing steering wheel angle. In Ravani, the "vehicle dynamic model used for the control design and subsequent simulation is the well-known simple 'bicycle' model with the linear non-dynamic tire model". (Column 5, lines 57-59). In explaining the vehicle dynamic model of Ravani, the reference mentions vehicle yaw rate, however, yaw acceleration forms no part of the control basis of the model of

U.S.S.N. 10/707,365

- 10 -

81044284FGT1838PUS

Ravani. For this reason alone, Applicants request that the rejections under 35 U.S.C. §102 and §103 be withdrawn because Ravani, either alone or in combination, does not suggest performing the claimed method steps when the vehicle is understeering as determined by the yaw acceleration being greater than the threshold and an increasing steering wheel angle.

Further, with respect to independent claim 1, the Ravani reference fails to disclose or suggest the Applicants' method step of when the vehicle model is understeering, operating the computer model with the initial steering wheel angle input until an error of the first steering wheel angle and the initial steering wheel angle is decreasing. Nor does Ravani disclose or suggest that when the error decreases, operating the computer model with the first steering wheel angle input. The same features are recited in independent claim 12. The Office Action's reliance upon Figures 6B and 6D of Ravani do not support the rejections. The only clear explanation of what is shown in those figures establishes that the vehicle model is not in an understeering situation, as required by the present claims. For this additional reason, the rejections under 35 U.S.C. §102 and §103 should be withdrawn.

Independent claim 20 should be allowable for at least the same reasons. That is, Figures 6B and 6D do not support the rejections of claim 21. Again, the Ravani reference does not disclose or suggest that the model therein is operated in an understeering condition. Further, there is no disclosure whatsoever or suggestion of Applicants' claimed feature of holding the steering wheel angle to a first steering wheel angle input out of the plurality of steering wheel angles stored until an error is decreasing; or that when the error decreases, the computer model is operated with one of the plurality of current steering wheel angle inputs subsequent to the first steering wheel angle input. Accordingly, the rejections of claim 21 as well as all claims which depend therefrom, should be withdrawn.

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U.S.S.N. 10/707,365


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Having overcome all of the objections and rejections set forth in the Office Action, Applicants submit that claims 1-5, 7-14 and 16-29 are in a condition for allowance. A Notice of Allowance indicating the same is therefore earnestly solicited. The Examiner is invited to telephone the Applicants' undersigned attorney at (248) 223-9500 if any unresolved matters remain.

Respectfully Submitted,

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